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EXAMINER	
LOUIE, MANDY C	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/537,391	HIROSHI ET AL.	
	Examiner	Art Unit	
	MANDY C. LOUIE	1715	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 January 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16 and 20-24* is/are pending in the application.

4a) Of the above claim(s) *22-24* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Newly submitted claims 22-24 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: claims 22-24 are drawn to an analytical tool and claims 1-16, 20-21 are drawn to a method of forming an analytical tool; wherein the technical feature between the inventions is not special as indicated below search.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 22-24 withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

PCT: Lack of Unity

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-16, 20-21, drawn to a method of forming an analytical tool, classified in class 427, subclass 372.2.

II. Claims 22-24, drawn to an analytical tool, classified in class 422, subclass 58.

Posteriori

Lack of unity of invention may become apparent under “a posteriori,” that is, after taking the prior art into consideration: the independent claims appears to be drawn to A

+ X and A + Y, and the unity of invention (i.e. species) presents “a posteriori” as A being common to both claims, where the prior art teaches A.

The inventions listed as Groups I-II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical feature which is referred to Annex B of Appendix A1 of the MPEP (Administrative Instructions under the PCT: “Unity of Invention”). The express “special technical features” is defined as meaning those technical features that define a contribution which each of the inventions, considered as a whole, makes over the prior art" with respect to novelty and inventive step (Rule 13.2). Unity exists only when there is a technical relationship among the claimed inventions involving one or more of the same or corresponding claimed special technical features. In this case, the technical feature shared by each invention is: an analytical tool comprising a base plate with a reagent member formed on the base plate.

The question of unity of invention has been reconsidered retroactively by the examiner in view of the search performed; a review of Harding [US 20020098114] teaches a medical diagnostic device with a reagent formed on a base plate [abstract; Fig. 1-2], makes clear that the inventions of the groups I-II lack the same or corresponding special technical feature due to novelty and, or inventive step being deficient. Accordingly, the prior art of the record supports restriction of the claimed subject matter in to the groups as mentioned immediately above.

Claim Objections

1. Claim 21 is objected to because of the following informalities: "wherein at least one of the reagent members is formed in the recess, at least one of the other reagent members being formed..." should read "wherein at least one of the reagent members is formed in the recess, and at least one of the other reagent members being formed...". Appropriate correction is required.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-3, 5, 10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rieger [US 5415838] in view of Kloepfer [US 6696240] and Yamamoto [US 6846073].

Regarding claim 1, Rieger teaches a carrier for colorimetrically detecting gases by use of indicators (reagent) [abstract], wherein the carrier comprises a base plate (3 and 12) [Fig. 2] with a reagent member (13) that includes a stack of at least two components (reagent layers) [Fig. 10; col 9, ln 60-69] that are separated by an

intermediate layer (intervening separation layer) [col 9, ln 65], each of the reagent layer containing a reagent that reacts with a component contained in a sample and are different from the other components [col 10, ln 15-24], wherein the sample may be in liquid form [col 10, ln 11], and wherein the components separated by the intermediate layer are aligned with each other in a direction perpendicular to the base plate [Fig. 10]. However, Rieger appears to be silent in teaching the reagent layers is formed by performing a plurality of steps of applying material liquid containing the reagent alternately with a plurality of steps of drying the applied material liquid. Kloepfer and Yamamoto remedies this.

In lieu of WO02/18144 publication in Japanese, US 20030179270 will used as an English translation, and hereafter be referred to in this office action for teachings of Yamamoto.

Regarding claim 1, Rieger teaches the reagent member may be deposited via microdrop generator (drop on demand technique) [col 4, ln 1-6]; wherein Kloepfer teaches a general capillary test device comprising a reagent film [abstract] wherein the reagent film may be deposited by inkjet printing (drop on demand) [col 17, ln 53-57] and suggests that it would be desirable to increase the thickness of the reagent in order to maximize the sensitivity of the reagent member [col 15, ln 66-67; col 16, ln 1-2]. Yamamoto teaches a method for printing a thick film by inkjet printing (drop on demand) [0001], wherein the film may be formed by ejecting ink on a substrate and immediately curing the ink ejected [0009], and increasing the thickness by further ejecting ink onto the cured ink and immediately curing the ejected ink [0009]. Although Yamamoto

teaches curing the UV ink to harden the ejected UV ink to prevent leveling [0010] rather than drying the ink, it would have been obvious to one of ordinary skill in the art that to solidify a liquid containing a reagent, one would dry the liquid containing the reagent to leave a harden layer of reagent as taught by Rieger [col 2, ln 50-53].

It would have been obvious to one of ordinary skill in the art to modify the reagent member of Rieger to increase the thickness to maximize the sensitivity of the reagent by performing a plurality of steps of applying the material liquid and alternatively with a plurality of steps of drying the applied material liquid as suggested by Yamamoto; since Yamamoto teaches such steps are operable to forming thick film.

Regarding claim 2, in light of the prior art, the steps of applying and drying the liquid is performed with the same liquid so as to build a thicker layer [Yamamoto, 0008; 0010].

Regarding claim 3, in light of the prior art, the step of applying and drying are performed at least 2 times [Yamamoto, 0008; 0010].

Regarding claim 5, in light of the prior art, the base plate comprises a reagent holding portion formed as recess including a bottom surface and a side surface, and wherein the reagent member is formed in contact with the bottom surface [Rieger, Fig. 2].

Regarding claim 10, in light of the prior art, the material liquid is applied to form each of the reagent layers with use of an inkjet type dispenser [Rieger, col 4, ln 1-10].

Regarding claim 16, the prior art teaches it would be desirable to have a thicker reagent layer in order to maximize the sensitivity of the reagent layer [Kloepfer, col 15,

ln 66-67; col 16, ln 1-2], wherein one of ordinary skill in the art would have optimize the final thickness of the reagent layer in order to achieve a desirable sensitivity. Although the prior art does not explicitly teach a thin film layer formed by performing one each of the applying step and drying step of the material liquid having a thickness of 0.1 to 5.0 micrometers, Yamamoto does teaches that the thickness of the film produced from the first printing affects the predetermined final thickness of the desired final film [0099], wherein it would have been obvious to one of ordinary skill in the art to optimize the thickness of the thin film through routine experimentation, since the thickness of the thin layer would affect the number of times a thin layer would need to be produced in order to achieve the desired final film thickness. Moreover, it would have been innate to the teaching of the prior art that the final thickness of the reagent layer would be greater than each film to build the reagent layer.

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rieger in view of Kloepfer and Yamamoto, and further in view of Obermayer [US 4258000].

Teaching of Rieger in view of Kloepfer and Yamamoto is aforementioned.

Regarding claim 4, although the prior art appears to be silent in teaching the material liquid applied contains 0.1-60 wt% of the reagent, it would have been obvious to one of ordinary skill in the art to optimize such a workable parameter through routine experimentation, such to provide sufficient amounts of reagent to produce an effective reaction to the analyte (i.e. toxic liquid or vapors) and lead to rapid visual detection as taught by Obermayer [col 4, ln 64-69].

4. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rieger in view of Kloepfer and Yamamoto in view of Buechler [US 6113855].

Teaching of Rieger in view of Kloepfer and Yamamoto is aforementioned, but appears to be silent in teaching the material liquid is applied to the bottom of the recess and spaced from the side surface by a constant distance, more specifically no smaller than 0.1 microns. Buechler remedies this.

Regarding claim 6, Rieger teaches the sample material to be analyzed may be in liquid form [col 10, ln 11] Buechler teaches an assay device for fluid samples [abstract] wherein distance between structures would affect the capillary forces of a liquid sample being drawn into the assay device to be analyzed [col 2, ln 1-10]. Although Buechler does not explicitly teach the capillary inducing structures may be reagents, it would have been obvious to one of ordinary skill in the art to design the reagent member as a capillary inducing structure to improve the capillary force of drawing a sufficient amount of liquid sample into the reagent chamber for improved reaction results. Buechler further teaches the capillarity inducing structure may be substantially uniform [col 2, ln 66-67], which would suggest having uniform distance (space) between structures (i.e. reagent and side wall) so as to have better predictability of the capillary forces in action.

Regarding claim 7, Buechler teaches minute distances are required between opposing surfaces in order to achieve capillary forces [col 4, ln 15-17] wherein capillary spaces between 0.5 microns to 200 microns are useful for binding reaction to a solid reactants [col 4, ln 63-64]. Hence, it would have been obvious to one of ordinary skill in

the art that the distance between the reagent member and the side surface of the recess is a result effective variable on capillary forces.

It would have been obvious to one of ordinary skill in the art to modify or optimize the space around the reagent member to the side surface of the device. One would have been motivated to do so in order to improve fluid flow of the liquid sample to the reagent via capillary forces in order to improve the kinetics of the reaction [Buechler, col 4, ln 55-59].

5. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rieger in view of Kloepfer and Yamamoto, and further in view of May [US 5089232].

Teaching of Rieger in view of Kloepfer and Yamamoto is aforementioned, but appears to be silent in teaching the recess (reagent holding portion) has a depth ranging from 50-200 micrometers (claim 8), where the recess has a volume ranging from 0.05-5 microliters (claim 9). May teach these deficiencies.

Regarding claims 8-9, May teaches an apparatus for measuring the concentration of an analyte (i.e. vapor) [abstract], wherein the apparatus comprises channels that have cross sections in the reaction zone that is less than 10 microns squared [col 2, ln 29]; the channels further are coated with an indicator or reagent for detecting the analyte [col 3, ln 2-10]. May further teaches the reduced dimensions of the reagent holding portion improves sensitivity and detection of analyte in low quantities [col 2, ln 1-5]. Although May does not explicitly teach the reagent holding portion has the claimed depth or volume, it would have been obvious to one of ordinary skill in the art to optimize the depth and volume of the reagent holding portion via experimentation

as a result effective variable since such spatial dimensions (i.e. depth, width, length) would affect the sensitivity and detection of an analyte from a sample.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rieger in view of Kloepfer and Yamamoto and further in view of Tisone [US 20020001675].

Teaching of Rieger in view of Kloepfer and Yamamoto is aforementioned, but appears to be silent in teaching the dispenser is designed to dispense the claimed range. Tisone remedies this.

Regarding claim 11, Tisone teaches a method for dispensing a reagent on a substrate [abstract] wherein the prior art teaches the size (volume) of the droplets will determine the effective resolution of the resulting pattern formed on the substrate [0075].

It would have been obvious to one of ordinary skill in the art at the time of the invention to optimize the volume of the droplet dispensed via experimentation as a result effective variable so as control the resolution of the reagent pattern formed by the dispensed droplet. Furthermore, Rieger teaches the it would be desirable to have a reagent film defined by the size of the droplet that can yield uniform surface distribution of the reagents along the substrate [col 4, ln 20-25]. It is further noted that the prior art teaches applying the material liquid to form each of the reagent layer by innately attaching a plurality of droplets to an application area to build a thicker film [Yamamoto, col 3, ln 5-20].

7. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rieger in view of Kloepfer and Yamamoto and further in view of Sasaki [US 20010055814].

A teaching of Rieger in view of Kloepfer and Yamamoto is aforementioned, but appears to be silent in teaching the amount of material liquid applied ranges from 1-200nL. Sasaki teaches this deficiency.

Regarding claim 12, Sasaki teaches in reagent dispensing environments, it is usually advantageous to dispense less than 100 nL [0031]. Sasaki also teaches it is possible to calibrate a printing device in order to deliver a predetermined amount of reagent required for an analytical device with a particular application [0030].

It would have been obvious to one with ordinary skill in the art at the time of the invention to modify the volume amount at which the material liquid is dispensed as taught by Sasaki. One would have been motivated to do so to effectively dispense a volume of reagent that is advantageous [Sasaki, 0031].

8. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rieger in view of Kloepfer and Yamamoto and further in view of Hashimoto [US 2003/0083203].

Teaching of Rieger in view of Kloepfer and Yamamoto is aforementioned, but appears to be silent in teaching some of the limitations of claims 13-15. Hashimoto remedies this.

Regarding claims 13-15, Hashimoto teaches a method for forming film patterns [title] with inkjet technique [abstract], where after droplets are dispensed onto the substrate, a drying treatment may be performed in order to remove a dispersion medium (solvent) with heat energy. The drying treatment may be with a common hot

plate (holding a heat source with a rear surface of the base plate), or lamp annealing (heat applied by radiant heat from above) [0115].

It would have been obvious to one with ordinary skills in the art at the time of the invention to apply heat energy to dry the reagent layer with reasonable expectation of expediting the drying process of the liquid reagent. Moreover, it would have been obvious to one of ordinary skill in the art to either apply heat from above the reagent or from behind since both techniques would be operable in drying the reagent in a quicker fashion than of air drying.

9. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Deeg [US 5378638] in view of Cottingham.

Regarding claim 20, Deeg teaches a process for manufacturing an analysis element [title] which comprises a reagent member forming process for providing a base plate (2) with reagent members (i.e. A, B) [abstract; Fig. 3] wherein the reagent member comprises a reagent that reacts with a specific component contained in sample liquid [abstract], and each of the reagent layer is formed by applying material liquid containing the reagent (first process step) and then drying the material liquid, and further applying material liquid containing the reagent for a second time (second step) [col 4, ln 60-69], where it would have been obvious to one of ordinary skill in the art that after applying material liquid for the second time, the material liquid would more or less start drying (repeating a combined step of applying material liquid containing the reagent and then drying the material liquid). Deeg also teaches the reagent member comprises a group of separate reagent dots, the reagent dots in the group overlapping each other [Fig. 1; col

4, ln 60-69] (to form a subgroup of reagent dots) and the group of reagent dots include a plurality of subgroups of reagent dots, each subgroup of reagent dots containing a different reagent, and the reagent dots in one subgroup overlapping the reagent dots in at least one of the other subgroups (i.e. TSH-Bio; TBSA-SA) [Fig. 3]. However, Deeg appears to be silent in teaching the reagent holding portion is formed with a recess including a bottom surface and side surface; wherein the reagent dots are formed entirely within the recess and spaced from the side surface. Cottingham remedies this.

Cottingham teaches a device for DNA assay [title], where the device include a base plate comprising a sample material (reagent, 30) holding portion formed as a recess including a bottom surface and side surface with the applied reagent spaced at a distance from the side surface [Fig. 1 and 4].

It would have been obvious to one with ordinary skills in the art at the time of the invention to modify the base plate of Deeg with the base plate of Cottingham to have a reagent holding portion formed with a recess that has a bottom surface and side surface, wherein the applied reagent is placed entirely in the recess and spaced at a distance from the side surface. One would have been motivated to do so to provide an effective design for delivering (by hydrostatic and capillary forces) and confining the liquid sample to sufficiently react with the reagents [Cottingham, col 8, ln 60-64], while also increasing the surface area of the reagent to be place in contact with the liquid sample for reaction [Cottingham, col 9, ln 5-9].

10. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cottingham (hereinafter '428) [US 5639428] in view of Goerlach-Graw [US 5424220] and Kloepfer [US 6696240] and Yamamoto [US 6846073].

Regarding claim 21, '428 teaches a method of forming an immunoassay device [abstract] which comprises a reagent member forming process for providing a base plate with a plurality of reagent members (i.e. 108, 106), each reagent member containing different reagent that reacts with a specific component contained in a sample liquid [i.e. Fig 4; col 9, ln 9-46], wherein the base plate comprises a flow path including a reagent holding portion formed as a recess (50) and a constant width portion narrower than the reagent holding portion, the recess including a bottom surface and a side surface [i.e. Fig. 4], and wherein at least on of the reagent member is formed in the recess, and at least one of the other reagent members being formed within the constant width portion of the flow path [i.e. Fig. 4]. However, '428 appears to be silent in teaching each of the reagent layer is formed by performing a plurality of steps of apply material liquid contaiing the reagent alternately with a plurality of steps of drying the applied material liquid. Goerlach-Graw and Kloepfer and Yamamoto remedies this.

In lieu of WO02/18144 publication in Japanese, US 20030179270 will used as an English translation, and hereafter be referred to in this office action for teachings of Yamamoto.

Regarding claim 21, Goerlach Graw teaches a method for forming an analysis element for determining an analyte in a liquid sample [tile], wherein Goerlach teaches it is more advantageous to use inkjet techniques to apply small portions of reagent liquid

onto a target area with high precision [col 6, ln 3-30], such that it is possible to apply different reagents onto a surface within a very small space that are close together but also spaced apart [col 6, ln 30-34]. Hence, it would have been obvious to one of ordinary skill in the art to use an inkjet technique to form the reagent spots of '428 to yield precise and small dried reagents in areas that are small (i.e. flow channels). Kloepfer teaches a general capillary test device comprising a reagent film [abstract] wherein the reagent film may be deposited by inkjet printing (drop on demand) [col 17, ln 53-57] and suggests that it would be desirable to increase the thickness of the reagent in order to maximize the sensitivity of the reagent member [col 15, ln 66-67; col 16, ln 1-2]. Yamamoto teaches a method for printing a thick film by inkjet printing (drop on demand) [0001], wherein the film may be formed by ejecting ink on a substrate and immediately curing the ink ejected [0009], and increasing the thickness by further ejecting ink onto the cured ink and immediately curing the ejected ink [0009]. Although Yamamoto teaches curing the UV ink to harden the ejected UV ink to prevent leveling [0010] rather than drying the ink, it would have been obvious to one of ordinary skill in the art that to solidify a liquid containing a reagent, one would dry the liquid containing the reagent to leave a harden layer of reagent.

It would have been obvious to one of ordinary skill in the art to modify the reagent member of '428 to increase the thickness to maximize the sensitivity of the reagent by performing a plurality of steps of applying the material liquid and alternatively with a plurality of steps of drying the applied material liquid as suggested by Yamamoto; since Yamamoto teaches such steps are operable to forming thick film.

Response to Arguments

11. Rejection under 35 USC 112, 1st paragraph over claims 1-16 and 20-21 is withdrawn due to applicant's amendments. It is further noted that it appears support for "apply material liquid containing the reagent alternately with a plurality of steps of drying and the applied material liquid" may be found in the instant specification on page 11, lines 23-27 and page 12, lines 1-5.

12. Applicant's arguments with respect to claims 1-16, 20-21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

1. No claim is allowed.

2. All the pending claims are subject to restriction/election requirement.

3. Claims 22-24 are withdrawn from restriction election.

4. Claim 21 is objected for the reasons aforementioned.

5. Claims 1-16, 20-21 are rejected for the reasons aforementioned.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MANDY C. LOUIE whose telephone number is (571)270-5353. The examiner can normally be reached on Monday to Friday, 7:30AM - 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571)272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. C. L./
Examiner, Art Unit 1792

/Timothy H Meeks/
Supervisory Patent Examiner, Art Unit 1715